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Roger Long's gut-strung keyboard instruments and Thomas Barton's harpsichord stringing

The inventory dated 1720 of the instruments owned by James Brydges, Earl of Carnarvon from 1714 and Duke of Chandos from 1719, mentions 'An Harpsichord with gut strings made by Mr. Longfellow of Pembroke Hall in Cambridge'. In the third edition of Boalch's *Makers of the harpsichord and clavichord 1440-1840* Richard Lockett is credited with the suggestion that 'Mr. Longfellow' was actually 'Mr. R. Long, a fellow and subsequently Master of Pembroke Hall, Cambridge'.¹ Newly-discovered sources confirm Lockett's suggestion and it can now be revealed that Long was the maker of not just one, but of three gut-strung keyboard instruments. His manuscript notes also contain important information about wire-strung harpsichords.

Roger Long was born on 2 February 1680 at Croxton Park, just north of Thetford, Norfolk.² He attended Norwich School and was admitted as a sizar to Pembroke Hall, Cambridge (now Pembroke College), on 4 March 1696. He was elected a fellow of the College on 6 March 1703. In 1716 he was presented to the parish of Orton Waterville and in the following year he resigned his fellowship at Pembroke to take up duties as tutor in the family of Sir Wolstan Dixie in Market Bosworth, following which he returned to Cambridge as a fellow commoner at Emmanuel College. In 1728 he took the degree of Doctor in Divinity and returned as a fellow commoner to Pembroke. A newspaper announcement in the *Daily Post*, dated 16 April 1730, refers to him as Chaplain to the Duke of Chandos. He became Master of Pembroke in 1733³ and was appointed as Vice-Chancellor of the University in the same year. In 1749 he was elected Lowndes Astronomical and Geometrical Professor. In 1751, on his resignation from the position in Orton Waterville, he was as Rector of

¹ D.H. Boalch, *Makers of the harpsichord and clavichord*, ed. C. Mould (Oxford, 1995), p.119.

² The main sources for Long's biography are the biography printed at the end of his own *Astronomy in five books*, vol. 2 (Cambridge, with a title page of 1764, but completed after his death by 'Mr. Wales, F.R.S. Master of the Royal Mathematical School in Christ-Hospital'), A. Attwater, *A short history of Pembroke College Cambridge* (Cambridge, 1973).

³ The London newspapers announced his imminent appointment as Master in 1730, but that appears not to have happened until October 1733 when newspapers announced the resignation of his predecessor and the election of Long.

Bradwell in Essex (he was also vicar of Cherry Hinton, near Cambridge). He died on 16 December 1770.

Long had interests well beyond divinity and astronomy. Edmund Carter's description of Pembroke in his history of Cambridge University (1753) contains the following comments:

The MASTER'S LODGE, which stands at the South end of the Hall, and is almost hid by the other Buildings, has several good Apartments, some of which are Stock'd with Musical, and others with Mathematical Instruments; and in a Ground Room he hath a Printing Press with the Apparatus belonging thereto, wherein he is Printing his Astronomical Works. But the chief beauty of this Lodge is (in my opinion) the Gardens, and therein the Water-Works, contrived by the present Master, (and here let me tell you, he is a very great Mechanic) which supplies a beautiful and large Bason in the middle of the Garden, and wherein he often diverts himself in a Machine of his own contrivance, to go with the Foot as he rides therein.⁴

Carter also noted that:

The HALL, is a spacious Room, and is handsomely paved; in which is often held a Concert of *Music*, the Master having a good taste thereof, and much delighting therein.⁵

William Cole, who collected much information about Cambridgeshire life, recorded that:

He has a great Taste for Music: plays on the Harpsichord or organ, composes, & even makes Harpsichords, being a great mechanic.⁶

Long's knowledge of keyboard instruments was enhanced by his acquaintance with William Mason, one of the earliest owners of instruments with a piano mechanism in England, who had been made a Fellow of Pembroke in March 1749 following a stand-off between Long, as Master, and the other

⁴ E. Carter, *The history of the University of Cambridge* (Cambridge, 1753), pp. 77-78.

⁵ Carter, *University of Cambridge*, p.77.

⁶ British Library Add. Ms. 5875, p.73.

fellows. In 1755 Mason acquired a combination harpsichord/pianoforte in Germany, probably by the maker Neubauer,⁷ as he wrote to his friend, the poet Thomas Gray on 27 June of the same year:

Oh, Mr Gray! I bought at Hamburg such a piano-Forte, and so cheap, it is a Harpsichord too, of 2 Unisons, & the Jacks serve as mutes (when the Piano Forte stop is playd) by the cleverest mechanism imaginable.⁸

In the mid-1760s Mason purchased a Zumpe square piano which he evidently loaned to Gray, who wrote to Mason in Aston from Jermyn Street, London, on 23 May 1767:

you will tell me what to do with your *Zumpe*, w^{ch} has amused me much here, if you would have it sent down I had better commit it to its Maker, who will tune it & pack it up. D^r. Long has bought the fellow to it. the base is not quite of a piece with the treble, & the higher notes are somewhat dry & sticky; the rest discourses very eloquent musick.⁹

The first instrument known to have been made by Long is the 'Harpsichord with gut strings' owned by James Brydges. It is numbered 15 in 'A Catalogue of Instruments belonging to his Grace James Duke of Chandos', an inventory now in the Huntington Library (MS ST 66) and in the hand of one Mr Noland, but signed by Johann Christoph Pepusch and dated by him 23 August 1720.¹⁰ The full entry reads: 'An Harpsichord with gut strings made by Mr. Longfellow of Pembroke Hall in Cambridge. This instrument stands at Boswell Court at my House.' This copy of the inventory was itself made from an earlier one compiled by Pepusch, presumably sometime after he began to draw a salary from Brydges in the middle of 1719. At some point before the first version of the inventory was drawn up

⁷ M. Debenham and M. Cole, 'Pioneer piano makers in London, 1737-74: newly discovered documentary sources', *Royal Musical Association Research Chronicle*, xli/1 (2013), pp.55-86, at p.67.

⁸ *Correspondence of Thomas Gray*, ed. P. Toynbee and L. Whibley, with corrections and additions by H.W. Starr (Oxford, 1971), vol.1, p.424.

⁹ *Correspondence of Thomas Gray*, vol. 3, pp. 957-958.

¹⁰ A transcription of the inventory is published in C.H. Collins Baker and M.L. Baker, *The life and circumstances of James Brydges first Duke of Chandos* (Oxford, 1949), pp. 139-140. See also G. Beeks, 'Notes on the Cannons music catalogues', *The Handel Institute Newsletter*, xxiii/1 (2012), pp. 1-3.

the harpsichord was presumably moved from one of Brydges' properties to Pepusch's house in Boswell Court (not to be confused with Brydges' house in Boswell Court).

When did Brydges purchase the instrument? He became Paymaster-General in 1705 and rapidly grew wealthy, so he may have purchased the harpsichord sometime during the first decade of the century, assuming it had been made by then. But it seems more likely that he acquired the harpsichord as part of the development of his musical establishment after he inherited the title of Earl of Carnarvon in 1714. By 1715 he was recruiting musicians and by 1717 both Pepusch (who directed the Concert) and Handel had visited Cannons. He also bought at least some of the instruments listed in the inventory.¹¹

We know nothing of how Roger Long's harpsichord was used, nor what happened to it after 1720. Having enjoyed a brief period of considerable prosperity Brydges suffered from the collapse of the South Sea Company in the summer of 1720 (the so-called South Sea Bubble) and the Sword Blade Company, and although he remained a wealthy man the musical establishment at Cannons declined in the following years and some of his property was sold. Brydges died in 1744 and shortly afterwards a *Catalogue of all the materials in the dwelling-house, outhouses, etc, of the Duke of Chandos* was published for an auction announced by Mr. Cock for 16 June 1747. The *Catalogue* contained entries only for the first four instruments mentioned in Pepusch's inventory and there is no mention of the gut-strung harpsichord. No other source is known to mention the whereabouts of Long's instrument.

It is likely, however, that information about harpsichord stringing in Long's commonplace book relates to Brydges' gut strung harpsichord. The commonplace book, now in the library of Pembroke College, contains five stringing schemes for harpsichords. The information is found on folios 36r, 46v

¹¹ Details of the acquisition of instruments and musicians for the Cannons Concert are found in the follow: C.H.Collins Baker and M.L. Baker, *James Brydges first Duke of Chandos*, especially pp.129-132; O.E. Deutsch, *Handel. A documentary biography* (London, 1955), pp. 110-111; G. Beeks, 'Handel and music for the Earl of Carnarvon', in P. Williams (ed.), *Bach, Handel, Scarlatti, tercentenary essays* (Cambridge, 1985), pp. 1-20; G. Beeks, 'Notes on the Cannons music catalogues', pp. 1-2.

and 47v (figures 1 – 3, transcribed in Appendix 1). Folio 36 (which contains the gut stringing information along with two other stringing schemes) may, or may not, have a connection with folios 46 and 47. The ink of folio 36 does not match the ink of folios 46 and 47 and there is a small difference in the otherwise comparable string scheme of folios 36 and 47. While the lengths for c^3 and c^2 in the long- measure stringing (7 and 14 inches respectively) are identical in both the folio 36 and the folio 47 schemes, the string lengths for c^1 differ; folio 36 has 27 inches, but folio 47 has 28 inches. The difference is relatively small, so perhaps all of the stringing information on folios 36, 46 and 47 derived from the same source, ‘Mr Barton’ (presumably the London maker Thomas Barton) mentioned on folio 47 – but we cannot be sure.

Although folio 36 may have been written at a different time, folios 46 and 47 clearly relate to each other. The comment ‘see the foregoing page’ occurs at the end of folio 47 and the detail of the diagram on folio 46 almost entirely matches the string gauge lists of folio 47, although there is a discrepancy between the information relating to the lowest strings. The diagram on folio 46 includes a fully chromatic compass from BB down to GG, requiring five gauge 11 strings for the short measure stringing, or three gauge 10 and two gauge 11 strings for the long measure stringing, within an overall stringing scheme of 54 notes. On folio 47 the long-measure scheme includes only 52 strings while the short-measure scheme has just 50, both schemes having just two gauge 10 strings and one gauge 11.

When did Long acquire his stringing information? A clue as to its approximate date can be gained from other evidence in the volume. The date 1698 is found inside the front cover of the volume, ‘1700’ is written at the top on the right of folio 11r, on page 78 (pages are numbered from folio 72 onwards) the date ‘a[nn]o 1701 occurs, page 242 is headed ‘Sept 1 ADⁿⁱ 1701’, a legal statement dated 21 May 1704 is found on page 245 and a further date, 30 August 1703, is found on page 336. From this description it will be clear that Long did not write the pages of the volume entirely sequentially; its organisation is more chaotic than that. Indeed, there are blank pages in the middle

of the volume, notably from folio 36v (the page after the first piece of string information) to folio 44v. Folio 47r is also blank – the page between the two related sets of information on folios 46v and 47v. Occasionally there are also pages which are written upside-down. Notwithstanding the various irregularities in the volume's presentation, it appears that much of it was written between c.1701 and 1704. However, Thomas Barton was apprenticed to Stephen Keene for seven years from 1 August 1699¹² and we may question whether Long would have asked an apprentice for this information. Of course, it is possible that Long asked Keene and was referred to Barton, but it is also possible that Long received the information after Barton was made a Freeman of the Joiners' Company in August 1706. Either way, we can date Long's stringing information to the first decade of the eighteenth century with reasonable certainty.

Information about gut-strung harpsichords is extremely rare. As far back as 1978 Frank Hubbard collected together eight separate accounts of gut-strung keyboard instruments from a variety of continental European sources,¹³ most of them very brief and lacking detail, and in 1982 Uta Henning examined those sources along with a few others in an article including documentation of some twentieth-century reconstructions.¹⁴ Hubbard's and Henning's work shows that there was little standardisation among the early continental plucked, gut-strung, keyboard instruments; some were harpsichord-shaped while others incorporated elements of lute design, and the compass was variable. Some had double stringing, at least in the bass, while the stringing in others was reinforced with wire registers, supplementary wire strings in parts of the compass, or substitute wire stringing in the bass. Recent research by Grant O'Brien and Francesco Nocerino has added significantly to our understanding of gut-strung keyboard instruments, demonstrating that the use of gut strings was more frequent in parts of Italy than has hitherto been realised.¹⁵ Their work has demonstrated that

¹² D. Martin, 'The native tradition in transition: English harpsichords circa 1680-1725', in D. Martin, J. Nex, L. Whitehead, G. O'Brien, *Aspects of harpsichord making in the British Isles* (Hillsdale, NY, 2009), p.71.

¹³ F. Hubbard, *Three centuries of harpsichord making* (Cambridge, MA, 1965), pp.327-330.

¹⁴ U. Henning, 'The most beautiful among the claviers: Rudolf Richter's reconstruction of a Baroque lute-harpsichord', *Early Music* x/4 (1982), pp. 477-486.

¹⁵ G. O'Brien and F. Nocerino, 'The tiorbino: an unrecognised instrument type built by harpsichord makers with possible evidence for a surviving instrument', *The Galpin Society Journal*, lviii (2005), pp. 184-208.

the term 'tiorbino' sometimes refers to small, gut-strung, keyboard instruments and perhaps to single registers on harpsichords otherwise strung with wire (ie, harpsichords with three registers, two of wire and one of gut). From all of these sources we can conclude that there was interest in plucked, gut-strung, keyboard instruments among continental makers and performers from the sixteenth to the eighteenth centuries, albeit the sources provide us with very little detail about their design. But what about British instruments? Apart from the reference to Roger Long's instrument in the Cannons inventory, only one other mention of a gut-strung harpsichord has come to light in a British source.¹⁶ In a lengthy passage on string vibration in his *Natural History of Oxford-Shire* (Oxford, 1677) Robert Plot included a tantalisingly brief and passing reference to 'a *Harpsechord* that I met with at Sir *Fairmedow Penyston's* with *Cats-gut* strings' (p.288). The short, but detailed entry in Roger Long's commonplace book is therefore a very valuable addition to our knowledge of British gut-strung harpsichord making, and it provides a level of detail often missing from the continental sources.

The relevant information is found in the first stringing scheme on folio 36 of Long's commonplace book and, although the information is brief, some conclusions can be drawn from it. A harpsichord built with this stringing scheme would have a compass of four and a half octaves, which is identical to the compass described in all of Long's other stringing schemes (although on folio 47 he mentions the possibility of an extension upwards to d³) and in contrast to the shorter compass found in the descriptions of some continental gut-strung instruments. The six-foot long lowest string in Long's scheme, GG, is of similar length to the equivalent on the Charles Haward harpsichord of 1683, but longer than its equivalent on other British harpsichords of the early eighteenth-century,¹⁷ from which we can conclude that a harpsichord built with this scheme would have been equal in length to

¹⁶ Henning, 'The most beautiful', p.477 refers to 'twoo faire paire of neue longe Virginalles made harps fasshion' in the inventory of Henry VIII's possessions on his death in 1547, but this is far from a conclusive reference to a gut-strung instrument.

¹⁷ D. Martin, 'The native tradition in transition', p.33. The chapter also gives string lengths for harpsichords from the first quarter of the eighteenth century by Tisseran, Barton, Hancock, Slade and Smith.

some of the longer instruments of the period and quite unlike some of the shorter continental gut-strung instruments. However, where Long's gut-strung scheme stands out from wire-strung designs in his commonplace book, and from other documented stringing schemes, is in the length of the treble strings.

Measurements of the string lengths from the three stringing schemes on folio 36 and the two schemes on folio 47 of the commonplace book are summarised in Table 1.

Table 1. Treble string lengths in the Long's harpsichord stringing schemes measured in inches					
note	Gut strung f.36	Brass strung f.36	Iron strung f.36	Long measure f.47	Short measure f.47
c ³	8	5.5	7	7	6.25
c ²	13	11	14	14	12.5
c ¹	23	22	27	28	25
c	39.5	39	45	-	-
C	63.5	66	66 (brass)	-	-
GG	72	72	72 (brass)	-	-

The length of the highest strings in all of Long's wire-strung schemes are broadly in line with, or greater than, designs found on other late seventeenth- and early eighteenth-century harpsichords,¹⁸ while the measurement of eight inches for the string at c³ in the gut-strung scheme is considerably longer, though in line with the vibrating length of a string producing the same pitch on a gut-strung violin, for example. How can we account for it? The length of a string will be determined by the desired pitch, the density of the stringing material and its tensile strength.¹⁹ Brass is slightly denser than iron, but has less tensile strength (ie brass has a less favourable strength to density ratio than iron), which accounts for the shorter treble strings that are necessary when brass wire is used. Gut, on the other hand, has a much more favourable ratio of strength to density, which is why longer treble strings can be used. One advantage of longer treble stringing is that it allows for a larger area of soundboard, and therefore better resonance, in the treble, the consequence being a slightly fuller

¹⁸ See D. Martin, 'The native tradition in transition', especially pp. 23, 57, 64, 75, 88, 96. 102 .

¹⁹ Taking into account that strings will not be strung to their breaking point; see Thomas Donahue, *The harpsichord stringing handbook*, (Lanham, Maryland) Chapter 2. I would also like to acknowledge the assistance of Dr David Jones, Cambridge University, for his help in determining the relative properties of gut and wire strings.

shape to the harpsichord at the treble end of the bentside. The fuller shape of the treble would be accentuated by the tapering of the bentside towards the bass end; the shorter string at C (63.5 inches), compared with the length of the equivalent brass string at this pitch (66 inches) would result in a more sharply tapered bentside in the bass. The differing measurements for the strings at C in the gut and brass schemes also strongly suggests that an instrument built according to Long's first scheme would be strung in gut throughout its range, rather than incorporating brass in the bass, as was evidently the case on at least one of the continental designs. Of course, there remains the possibility that the bass strings in Long's design would have been gut overspun with some other material, but there is no evidence with which to clarify this issue.²⁰

It is not the purpose of this article to comment in detail on all of the stringing schemes in Roger Long's commonplace book, but because of their connection with 'Mr Barton' a brief comparison of Long's comments with data from Thomas Barton's only extant harpsichord is warranted.

The stringing of Barton's harpsichord in the Rodger Mirrey Collection at the University of Edinburgh has been the subject of detailed scrutiny, the conclusion of which is that the maker's 'presumable intention' was 'of scaling the instrument for brass throughout the compass and for a rather low pitch (about A400)'.²¹ The same study found evidence of both yellow and red brass wire, concluding that red brass may have been used in the bass when it was originally strung, with yellow brass for the rest of the compass.²² There is no specific mention of red wire in Long's commonplace book, just 'brass wire', but there is a strong correlation between the string lengths of the Barton harpsichord with the stringing scheme for brass on folio 36 of the commonplace book, except in the bass, which may suggest that Long's information derived from Barton, as table 2 demonstrates. (Long's original

²⁰ For information on gut strings see P. Barbieri, 'Roman and Neapolitan gut strings', *The Galpin Society Journal*, lvix (2006), pp. 147-181 and M. Peruffo, 'Italian violin strings in the eighteenth and nineteenth centuries: typologies, manufacturing techniques and principals of stringing', <http://ricerche.aquilacorde.com/i-nostri-lavori/21/tipologie-tecniche-manifatturiere-e-criteri-di-scelta-delle-montature-di-corda-per-violino-tra-il-xviii-e-xix-secolo-in-italia/>, consulted 12/02/2016.

²¹ D. Martin, 'The native tradition in transition', p.81.

²² D. Martin, 'The native tradition in transition', pp. 82-83.

measurements in inches are converted into millimetres for ease of comparison, but it must be born in mind that Long's smallest unit of measurement was the quarter inch (just over 6 mm) and in places he uses the terms 'about' and 'near' to qualify string lengths on folio 47, so that there are probably considerable margins for error in the millimetre equivalents).

Table 2. Comparison of string lengths in Long's brass-stringing scheme (f.36) with the string lengths of Barton's harpsichord			
note	Long's f.36	Barton harpsichord long 8' choir	Barton harpsichord short 8' choir
c ³	140	140	133
c ²	279	287	273
c ¹	559	563	539
c	991	1027	993
C	1676	1540	1531
GG	1829	1550	1544

As the figures show, Long's c³ measurement matches that of the long c³ on the surviving instrument.

Long's measurements for c² and c¹ lie between the measurements for the two extant harpsichord choirs. Long's c string is 2mm shorter than the equivalent note on the short harpsichord choir, but bearing in mind the potential margin for error in the measurements it is possible that the two strings should be the same length. Below that, the greater length of Long's bass strings are clearly evident.

Is the close alignment of the string lengths from c to c³ evidence that Long's figures came from Barton? The evidence is suggestive, but far from conclusive.

A comparison of gauge numbers from the Barton harpsichord (found on the wrestplank) with those of the two schemes on folio 47 of Long's commonplace book might have been interesting, but Barton's extant harpsichord is fully strung in brass and it is only the iron/brass stringing schemes in Long's commonplace book that have gauge numbers. However, the commonplace book gauge numbers confirm that Barton used lower-numbered string gauges (ie thinner strings) than Georgian makers, as demonstrated on his extant harpsichord. Darryl Martin comments that, in the Georgian period, 'gauge 3 was only rarely used in the extreme treble and gauges 2 (with a single exception)

and 1 are never found'.²³ But in Long's long-measure scheme on folio 47 there are six gauge 2 strings and eight gauge 3 strings and in the short measure scheme there are six gauge 3 strings. Furthermore, on folio 47 Long states that, if the highest note of a harpsichord is d³ 'there must be a string of the smallest wire', presumably gauge 1. As Darryl Martin suggests, Barton was using lighter stringing than his Georgian counterparts.

Having examined the evidence of Roger Long's commonplace book we will now turn to other sources for information about two other gut-strung keyboard instruments that he is known to have made, his lyrichord and his gut-strung travelling harpsichord.

The only evidence concerning Long's lyrichord is found in a letter from Thomas Gray to Thomas Wharton dated 5 August 1763:

I have forgot to tell you that Dr. Long has had an audience of the K: & Queen an hour long at Buckingham-House. His errand was to present them with a Lyricord (such a one !) of his own making, & a glass-sphere: he had long been soliciting this honour, w^{ch} L^d Bute at last procured him, & he is very happy. the K: told him, he bid fair for a century of life at least; ask'd him, whether he preach'd.²⁴

It is not known exactly when this visit to the King and Queen took place, but it was almost certainly several months prior to Gray's letter. The *Gazetteer and London Daily Advertiser* for Tuesday 17 May 1763 reported that on the previous Sunday 'Dr Long preached before their Majesties'. Asking Long whether he preached, as reported in Gray's letter, would have been inappropriate after the event. In all probability Long's visit to the King and Queen took place sometime in the spring of 1763 prior to 17 May.

The glass sphere in Gray's letter relates to Long's astronomical activities, but the lyrichord was a keyboard instrument. No other source mentions it, but it is likely to have been modelled on Plinius's

²³ D. Martin, 'The native tradition in transition', p. 79

²⁴ *Correspondence of Thomas Gray*, vol. 2, p. 807.

design, which was described in detail in *The General Magazine of Arts and Sciences* (August 1755), pp. 131-2.²⁵ Plenius's lyrichord was a keyboard instrument with a compass of 59 notes operated by small wheels, rather than quills, which rotated and touched the strings, producing a sustained sound which could also be made louder or softer according to the pressure applied to the strings by the performer. Describing the strings, the author of the article commented that 'some ... are of Wire, others Catgutt, and the larstest [sic] Sort wrought or cover'd with Silver-wire, like those of the largest Bass-Violins. Between the Bridges the longest Strings are about 30 Inches and the shortest about 6; as near as we can recollect, having seen this Instrument but once'²⁶. Because of the shortness of the strings the denser wire and overspun gut strings would have been needed in the lower half of the instrument, assuming the pitch to have been equivalent to other keyboard instruments of the period. Performances on Plenius's lyrichord were the subject of a number of press announcements from 1745 to 1761²⁷ and given Long's curiosity in keyboard-instrument design and his connections in the capital it is likely that he saw one of them.

The evidence for the existence of Long's travelling harpsichord with gut strings is found in notes made by William Cole, a Cambridgeshire clergyman who collected a great deal of material on characters, events, places and buildings in his home county. His notes on Roger Long include information drawn from the *Cambridge Chronicle* about a new music room in Cambridge for which Long contributed 20 guineas and extensive notes on Long's University activities, particularly his Lowndes professorship in astronomy. Cole noted that Long:

is the *present Professor June 19. 1770*. He went to Court about 2 years ago, & was introduced to the Queen, to whom he made a Present of an Harpsichord of his own making & Invention, which might be put into a Post Chaise to play on the Road, the Strings of which were of Catgutt, to make the Tone softer. He sat down before her Majesty to tune it,

²⁵ The article is reproduced in E. Halfpenny, 'The lyrichord', *The Galpin Society Journal*, iii, pp. 46-49.

²⁶ *The General Magazine of Arts and Sciences* (August 1755), pp. 131-132.

²⁷ See M. Debenham and M. Cole, 'Pioneer piano makers', pp. 60-65.

making an Apology for his Age of 86, & said he did not dare to ask her Maj: to sing to it, because she was a Queen: who behaved with great Humanity & Condescension to him, & gave him a Print of her children, which she told him she gave to particular Friends only, he having said that a man of his years was led to solicit no Preferment.²⁸

That this event was distinct from Long's display of a lyrichord, also to royalty and also in the 1760s, is confirmed by a number of details. Two different instruments are mentioned and Cole's account refers only to the Queen while Gray's account of Long's visit to Buckingham House was to both the King and Queen. Although there is a slight discrepancy concerning Long's age in Cole's account (he would not have been 86 'about two years ago' – ie 1768) it is unlikely that Cole was referring to an event that took place 7 years earlier, in 1763, the date of Gray's account. And the date of Gray's account is not in doubt; the letter itself is dated and the visit to the King and Queen was arranged by Lord Bute, who was First Lord of the Treasury (effectively prime minister) from May 1762 to April 1763, but who fell out with the King in 1766. We can safely conclude that the King and Queen saw the lyrichord in 1763, but the Queen on her own saw a travelling harpsichord at the later date.

No details of the travelling instrument are known, but we might question the terminology used by Cole. 'Harpsichord' would imply a lengthy instrument entirely unsuited to being carried into a post chaise. It seems more likely that the instrument had a smaller case, perhaps more like a spinet. If this were so, it is just conceivable that there might be some connection between Long's travelling 'harpsichord' and the Italian tiorbino described by O'Brien and Nocerino.²⁹

What do we learn from Roger Long's engagement with gut-strung keyboard instruments? From the evidence presented in this article we know that he had a lifelong interest in them which demonstrates far more than mere curiosity; his efforts were evidently as serious in the 1760s as they had been 60 years previously. The lyrichord and travelling 'harpsichord' were most likely made in the

²⁸ British Library Add. Ms. 5834, p.469.

²⁹ See note 16.

late 1750s/1760s and work on them seems to have interrupted his astronomical studies. A letter of 29 January 1780 from J. Green to Thomas Birch comments that

Dr Long advances, but slowly, in his astronomical work; tho' ye larger part of his 2d vol. is I believe printed. But he keeps amusing himself with a press of his own, and with alterations in musical instruments, of wch he is very fond.³⁰

Long's strong and lasting interest in gut-strung keyboard instruments suggests that throughout his life he searched for a gentler sound than wire-strung harpsichords produced. He did this despite the obvious problems associated with gut stringing, which need tuning much more often because of their susceptibility to humidity change (Long's visit to the Queen with his travelling 'harpsichord' even began with him tuning the instrument in front of her).

We also learn from Long's commonplace book that he was almost certainly not the only one interested in gut-strung harpsichords at the beginning of the eighteenth century. The stringing information on folio 36 must surely have come from the harpsichord makers Barton and Keene, or from some other maker, since a college fellow in his twenties could hardly be expected to have sufficient experience to work out harpsichord stringing schemes on his own. In all likelihood there were other gut-strung keyboard instruments around in England in Roger Long's lifetime apart from Plenius's lyrichord. It is frustrating that further evidence of their existence has yet to come to light.

Appendix. Transcription of string details from Roger Long's commonplace book

Roger Long's commonplace book folio 36r

	brass wire	Iron wire
Highest c in catgut 8 inch	5 ^{inch} ½	7 ^{inch}
2 c ——— 13 inch	11	14
3 c ——— 23 inch	22	27

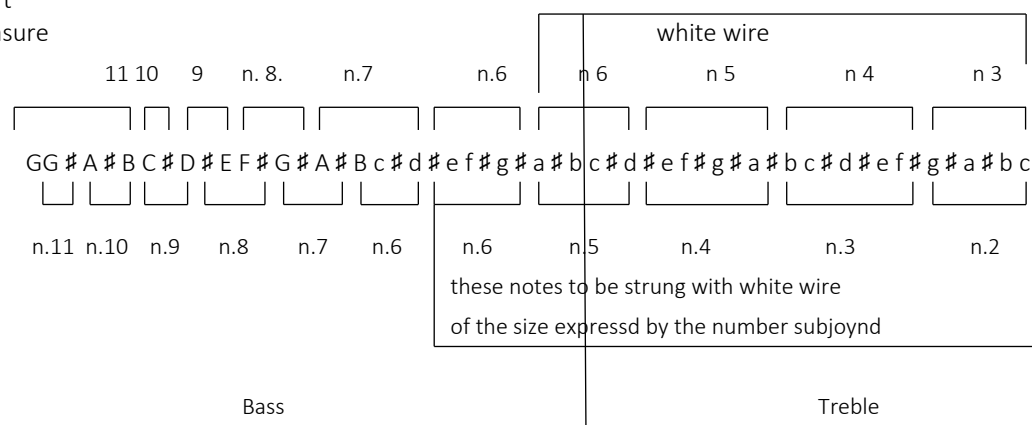
³⁰ Letter of 29 January 1780 from J. Green to Thomas Birch, British Library Add. Ms. 4308, f. 192.

4 c	3 ^{foot} 3 ½	3 ^{foot} 3 inch	3 ^{foot} 4 inch
5 c	5 ^{foot} 3 ½	5 ^{foot} 6	b the next brass [two words unclear]
GG	6 ^{foot}	6	

Roger Long's commonplace book folio 46v

Short

Measure



Roger Long's commonplace book folio 47v

To string a Harpsichord from M^r Barton

M^r Barton says gave me two schemes one for long measure the other for y^e short. The long measure is when y^e upper C solfaut is near 7 inches long the next 14. The 3^d C solfaut 2 foot 4 inches. The short measure is when y^e upper C solfaut is about 6 inches y^e next C and a q^r the next C 1 foot halfe an inch. The 3^d C 2 foot one inch.

	long measure		short measure		
	Numb.	Strings	Numb.		
white wire	2	6	3	-	6 strings
	3	8	4	-	8
	4	8	5	-	8
	5	6	6	-	6
	6	6	6	-	6
Brass wire	6	4	7	-	6
	7	4	8	-	6
	8	4	9	-	3
	9	3	10	-	2
	10	2	11	-	1
	11	1			

The first column of each measure is y^e number or size of y^e wire

The 2^d column the number of strings of each size

The rule is for a harpsichord that goes as high as C solfaut if # the upper note be D there must be 8 strings of the smallest wire.

See the foregoing page.

Figures

Fig. 3. Roger Long's commonplace book folio 47v.

